

# TRANSACTIONS

OF THE

## PHILADELPHIA ACADEMY OF SURGERY.

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*Stated Meeting, February 3, 1908.*

The President, DR. WILLIAM J. TAYLOR, in the Chair.

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### EXCISION OF THE CLAVICLE WITH PERFECT FUNCTIONAL RESULT.

DR. JAMES K. YOUNG presented a girl, 11 years of age, who fell in the school yard on January 30, 1907, injuring the left knee. The following day she had a high temperature and great prostration which continued until four days later when she had a hemiplegia of the left side. The knee continued painful but there was no swelling until the end of six weeks, when it swelled suddenly and to a great degree. A small pustule formed on the anterior surface and was opened and drained by the attending physician, and a drainage-tube was inserted. A slough occurred over the left clavicle which extended until the central third of the bone was fully exposed. The lower part of the neck and face also became enormously swollen and for three or four days she could not move her head. Pieces of bone were discharged from the right side of the inferior maxilla within the mouth.

On July 11, 1907, she was admitted to the Polyclinic Hospital under the care of Dr. Young. The pus discharging from the wounds at this time showed the presence of *Staphylococci pyogenes aureus*, and a diagnosis of osteomyelitis was made. On September 20th, 1907, the clavicle still being exposed and it being impossible to close the wound, the entire clavicle was removed subperiosteally. The specimen examined in the pathological laboratory of the Polyclinic by Dr. James A. Kelly, Pathologist, showed an acute suppurative condition of the medullary cavity and osseous structure. The proximal extremity of the right clavicle was also removed.

Both wounds healed by granulation, and the X-ray taken January 31, 1908 shows a regeneration of the clavicle. The functional use of the part is remarkable but corresponds with what has been described by other observers where after removal of the clavicle the function of the shoulder has not been materially changed.

#### MALIGNANT ULCER OF ORBIT.

DR. WARREN WALKER presented a woman, thirty-five years of age, who came to the surgical dispensary of the Episcopal Hospital for treatment in the first week of December, 1907, giving the following history: married for nineteen years; has three healthy children; has had two miscarriages during past year; smallpox at four and abscesses of neck following typhoid five years ago.

*Present condition* began eighteen months ago with a small sore at left inner canthus which gradually increased in size. There was a clear watery discharge; no blood. The growth has within the past three months ulcerated into the nasal cavity and destroyed the muscles on the inner side of the eyeball. She has no pain but suffers from severe headaches. She was put on K. I. and inunctions of mercury, and the wound appeared to be slowly granulating when she developed a nephritis and treatment had to be stopped.

#### NON-ABSORBABLE LIGATURES AND SUTURES.

DR. OSCAR H. ALLIS read a paper entitled The Non-absorbable Ligature and Suture, for which see page 758.

#### GERMAN HOSPITAL SURGICAL CLINICS.

DR. JOHN B. DEEVER read a "Report of the Saturday Surgical Clinics for Students at the German Hospital during 1906-07," for which see page 761.

#### FRACTURE OF THE PROXIMAL END OF THE FIFTH METATARSAL BONE.

DR. HENRY R. WHARTON reported the following cases:

CASE I.—W. A. G., aged 45 years, in jumping from a wagon in a runaway landed upon his right foot and found he had pain and difficulty in walking. On the third day after the accident, and as the foot was still painful and interfered with walking,

he consulted Dr. Wharton, who found on examination that there was marked swelling over the proximal end of the fifth metatarsal bone, and great tenderness upon pressure of this portion of the bone. An X-ray examination showed that there was a fracture through the proximal end of the bone. A plaster-of-Paris bandage was applied for two weeks, and upon its removal, as the tenderness had disappeared, strapping and a bandage were applied, and he was able to walk comfortably with the aid of a cane. Two weeks later he was able to discard all dressing and walk without difficulty.

CASE II.—E. B., aged 10 years, while skating upon roller skates ran into the curbing and fell, twisting her foot. She immediately experienced pain in the outer portion of left foot and walked with great discomfort. Dr. Wharton saw her within an hour of the accident, and found a distinct swelling over the proximal end of the fifth metatarsal bone; this region was also extremely tender upon pressure. An X-ray examination on the following day showed a fracture passing through the proximal extremity of the bone. A plaster-of-Paris bandage was applied for two weeks, and upon its removal strapping and a bandage were applied, and the patient walked without difficulty.

CASE III.—J. C., aged 10 years, received a wrench of the foot while playing foot ball. He applied to the Dispensary of the Children's Hospital on the following day, complaining of pain in right foot, and difficulty in walking. Upon examination there appeared swelling of the tissues, and tenderness on pressure over the proximal end of the fifth metatarsal bone of the right foot. From the symptoms presented, which were exactly similar to the two cases reported above, Dr. Wharton thinks he had the same variety of fracture. Dr. Wharton further remarked that fracture of the shaft of the metatarsal bone is not an uncommon accident, and is said to be most common in the first and fifth metatarsal bones. The special variety of fracture reported in the above cases, the accurate diagnosis of which is impossible without the aid of an X-ray examination, does not seem to have been described by surgical writers. Hamilton speaks of fracture of the first and fifth metatarsal bones as most common, but makes no mention of fracture of the proximal end of the bone. Scudder mentions the greater susceptibility to fracture in the first and fifth metatarsal bones, and shows a skiagraph of a transverse fracture of the fifth

metatarsal bone near its proximal extremity. Von Bergmann mentions a condition formerly described as tumor of the foot which was not uncommon in soldiers who made long marches carrying heavy weights. Bruthaupt, Schentze, Kocher and others, with the aid of X-ray examinations, have shown that this condition is usually due to a fracture of the second or third metatarsal bone. It is probable that the systematic X-ray examination which is now so generally employed in fractures, will show that it is a comparatively frequent injury.

Fracture of this portion of the bone is probably of the nature of a sprain fracture, the fragments being separated by the ligamentous slips from the dorsal or plantar ligaments which attach it to the cuboid. Displacement of the fragments seems slight.

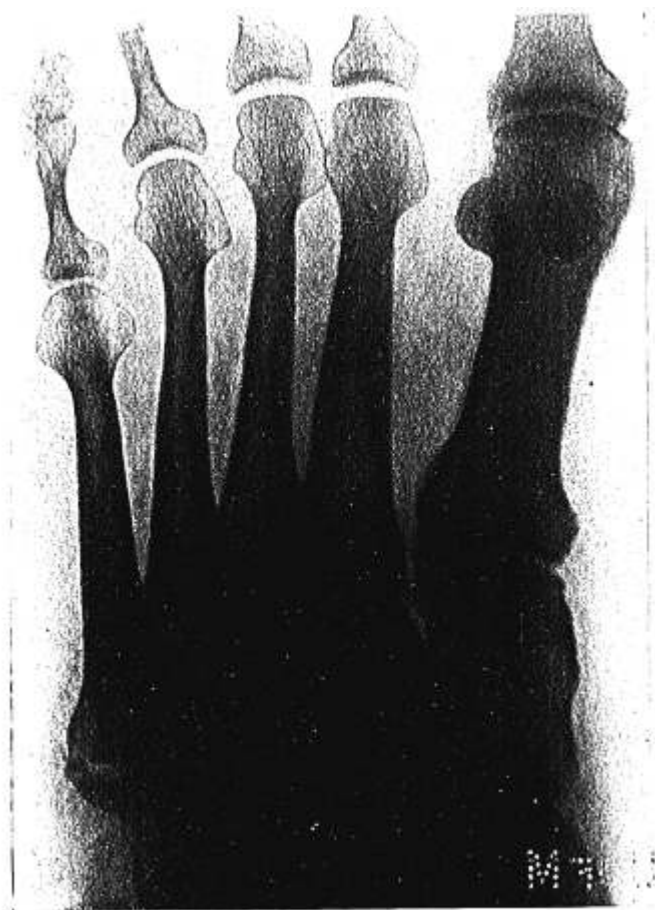
The treatment which seems most satisfactory is the application of a plaster-of-Paris dressing for a few weeks, or firm strapping and a bandage, which is followed by good use of the foot in from three to four weeks.

DR. JAMES K. YOUNG wished to place on record a case in which union did not occur. This was verified by X-ray examination. In this case the distal end of the fifth metatarsal bone was first removed. This did not relieve the metatarsalgia, and therefore the distal end of the fourth metatarsal bone was removed. This gave some relief to the patient, and no other operative treatment was undertaken. Dr. Young simply wanted to show that the treatment advocated by Dr. Wharton is not always satisfactory in producing union in fracture of the fifth metatarsal bone.

#### MULTIPLE FRACTURE OF THE LOWER JAW TREATED WITH AN INTERDENTAL SPLINT.

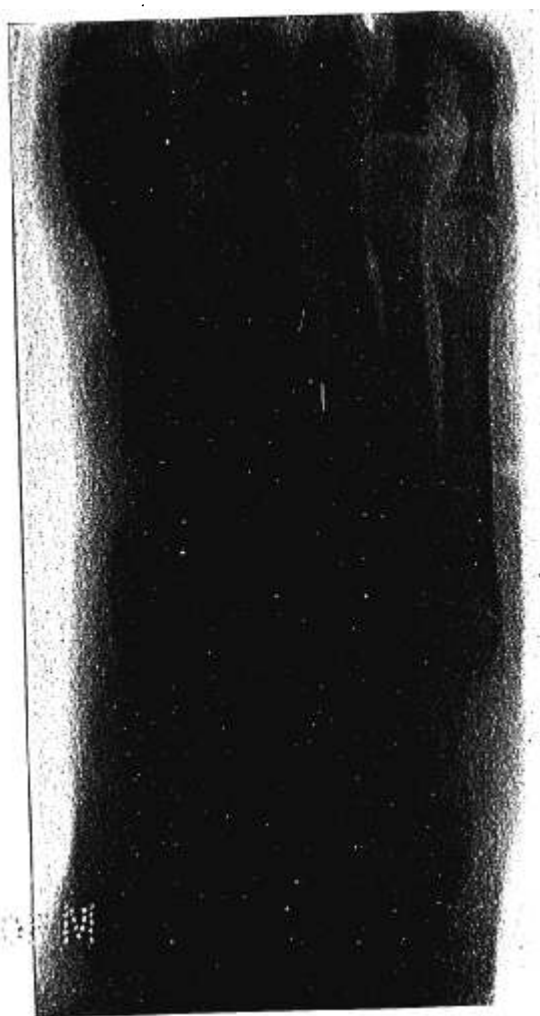
DR. HENRY R. WHARTON reported the case of a man, aged 24 years, who received an injury of the lower jaw probably by a blow from a blackjack. He came under the operator's observation upon the following day, when it was found that there was a small lacerated wound of the left cheek which did not communicate with the mouth, and there were also two fractures of the body of the lower jaw, one on the left side just in front of the wisdom tooth, the other on the right side near the mental

FIG. 1.



X-ray showing fracture of proximal end of fifth metatarsal.

FIG. 2



X-ray showing fracture of proximal end of fifth metatarsal.

foramen. The bone between these two lines of fracture was displaced downward, several teeth were loosened, and one had been knocked out near the fracture on the right side of the jaw. It was found by manipulation that the fragment could be replaced, but even with a compress and Barton's bandage it could not be kept in position so that the teeth could be made to articulate.

An X-ray examination made with the compress and Barton's bandage applied showed that distinct deformity still existed, and it seemed that satisfactory correction of the deformity could only be obtained by wiring the fragments or employing an interdental splint, and Dr. Gritman, of the Dental Department of the University of Pennsylvania, made casts of both jaws, and from these casts metal moulds were made upon which the splint was shaped. The most difficulty in fitting the splint was due to the fact that the only retaining point posterior to the fracture on the left side of the jaw was a partially erupted wisdom tooth.

The interdental splint was applied on the fifth day after the injury, and the jaws were firmly held in contact with the splint by means of a Barton's bandage. An X-ray examination at the end of a week showed that the displacement of the fragment had been corrected and the articulation of the teeth was perfect. The splint was removed at the end of five weeks, and the articulation of the teeth was found perfect, but as the union at the seat of the fracture was not quite firm, it was re-applied for two weeks longer, making seven weeks in all that it was worn. Even at this time it did not seem safe to remove all retentive apparatus, so the patient wore through the day a light Barton's bandage, and was not allowed to use the jaw in mastication, and at night he re-applied the splint, to guard against any violent involuntary movement of the jaw during sleep. The patient during the whole course of treatment was kept on liquid nourishment.

The result obtained was an excellent one, there being absolutely no deformity and the articulation of the teeth being perfect.

DR. GEORGE M. DORRANCE (by invitation) said he had had during the past year 77 cases of fracture of the jaw, 23 of which he had treated with intermaxillary splints or interdental splints. Some were treated by the so-called Angle method, which really does not belong to Dr. Angle; others with the Matas splint, which he modified somewhat; and others with the Barton bandage. Reviewing all these cases he thinks the Barton bandage should

be discarded absolutely. In cases where it is impossible to obtain the interdental or intermaxillary splints the Angle or Dorrance modification of Matas' method give most satisfactory results. In speaking of results one takes the articulation of the teeth, not their alignment. If a fracture is within the line of the teeth all that is needed is an interdental splint which covers over the lower teeth. The patient can open his mouth, talk, and eat semi-liquid food. In every one of the 23 cases in which Dr. Dorrance used the intermaxillary or interdental splint he has perfect articulation. In those in which the Angle method was used he had some failures because the application was not correct, or because of the slipping of the two bands which go around the teeth. The Angle method consists of a band around the upper teeth and a band around the lower teeth; between these two there is a rod which is held in place by a clamp around the band on the upper teeth, and again by a clamp on the lower teeth. This holds the lower jaw against the upper. It is easily applied by a surgeon; but an interdental splint should be applied by a dentist. Dr. Dorrance has treated 3 cases of fracture of the upper jaw with the interdental splint. The jaw is immediately reduced and a cast taken; this will undoubtedly show some deformity; then another cast is made and a die is made of that, and finally a German silver die is wedged over the copper one. This silver splint is placed on the teeth by cement and fracture is in perfect position, and the patient can eat food he does not have to chew. The results from the intermaxillary and interdental splints have proven most satisfactory in every respect.

CASES OF FRACTURE OF THE PATELLA TREATED BY  
OPEN OPERATION AND SUTURE OF THE FRAGMENTS.

DR. HENRY R. WHARTON reported the following cases:

CASE I.—W. R., aged 23 years, in December, 1907, while fox-hunting, fell with his horse and received an injury of the left knee. A temporary dressing was applied and the patient was removed to the Presbyterian Hospital.

Upon the third day after the injury the patella was exposed by a transverse incision over the knee-joint, and a very large amount of blood-clot was removed. Examination of the fracture showed that there were three fragments, the upper fragment



consisting of two pieces, the smaller one to the left side was held by a periosteal hinge. The upper and lower fragments were drilled and were brought into apposition by several strands of chromicized catgut passed through the drill holes and secured by tying. After securing the fragments two additional layers of chromicized catgut sutures were employed to approximate the periosteum and capsular structures, and a third layer of silkworm gut sutures were employed to approximate the connective tissue and skin. A small cigarette drain was introduced at the angle of each wound before the capsular structures were closed by sutures. The wound was covered by a gauze dressing, and a plaster-of-Paris dressing was applied to the limb from the toes to the groin, with provision for strapping when dressing of the wound became necessary. The small drains were removed on the third day, and the sutures were removed on the tenth day, and the wound was found healed.

The plaster-of-Paris bandage was removed at the end of a month, and gentle passive motion of the joint and massage of the limb were practised. The patient was allowed to walk on crutches at the end of six weeks. Motion of the joint gradually improved, and at the end of ten weeks he walked with a cane. The function of the joint gradually returned, and six months after the injury he apparently had full extension and flexion of the joint. An X-ray taken eleven months after the injury shows the condition of the patella.

CASE II.—Mrs. M. R., aged 60 years, tripped upon a rug and fell, fracturing the right patella.

She was removed to the Presbyterian Hospital, and upon the third day after the injury the patella was exposed by incision, and the fragments and capsular structures were approximated, as in the case previously described. The dressing applied and the after-treatment were similar to that described above. The result obtained was very satisfactory, and at the end of six months motion of the knee-joint was almost perfect.

CASE III.—Mrs. R., aged 45 years, in August, 1906, fell downstairs, doubling her right knee under her, sustaining a fracture of the right patella. She was sent to the Presbyterian Hospital and was under the care of Dr. Hodge, who exposed the fragments by incision and approximated them by suture of

the capsular structures. The patient did well and was discharged with good union of the fragments. She states that she regained normal use of the limb.

On February 12, 1907, she stepped upon a piece of ice and fell, fracturing the same patella. She was admitted to the Presbyterian Hospital on February 18th, and the fragments were exposed by a longitudinal incision. It was found that union of the fragments had occurred by isolated bony areas, five or six in number, the intervening union being fibrous. The edges of the fragments were freshened, drilled and approximated by a few strands of chromicized catgut. The periosteum and capsular structures were next approximated with chromicized catgut sutures, and the skin and connective tissues with silkworm gut sutures. The limb was put up in plaster, and the case made a good recovery, and was discharged from the hospital on March 3, 1907.

An examination of this patient within a few weeks, shows that she walks without a limp, and has regained full function of the knee-joint.

#### OSTEOPLASTIC RESECTION OF THE SKULL.

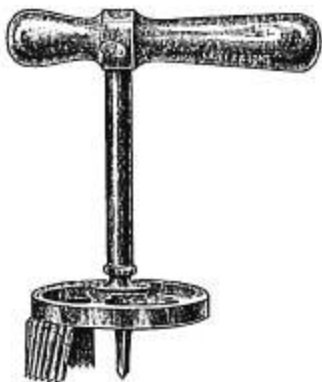
DR. A. C. WOOD exhibited "An Instrument for Performing Osteoplastic Resection of the Skull," and read a paper upon the subject, for which see page 645.

DR. JOHN B. ROBERTS said he was very much interested in trephining instruments and had employed Stellwagen's and others. He showed last September at the State Medical Society a device of his own which he thinks is good; the instrument is simply the segment trephine, a modification of the old-fashioned trephine. He has never made use of the Cryer instrument, run by a surgical engine, although he believes it to be one of the best instruments obtained if the power is run by a practised and competent man. It is, however, very much more expensive than most individuals can afford. The price of his modification of the old-fashioned trephine he believes to be only a few dollars. Dr. Roberts thinks Fetterolf's nasal septum rasp an exceedingly good tool to cut the hinge of the flap made by the segment trephine in osteoplastic resection of the skull.

DR. THOMAS C. STELLWAGEN (by invitation) said that Dr. Wood had overcome most of the difficulties that the surgeons had in the use of his instrument through his modifications. When

this instrument was first used the great trouble was that the pressure was put on the saw; they did not let the saw act with its own weight, and this pried the centrepiece away. Afterwards a plate was made to screw into the bone, which largely overcame the difficulty. This however required

FIG. 1.



extra time and so necessitated a little longer time in the operation. Dr. Stellwagen does not recall in some fourteen cases trephined in which he assisted, any case where there was an injury to the dura. He does not think the dura will be injured if ordinary care is taken in trephining. It may be scratched but he has

FIG. 2.



never seen a case where the dura was cut through. Another advantage of the plate is that it controls hemorrhage from the central portion of the flap and keeps it from being torn from its attachments. In one case which Dr. Stellwagen attempted to trephine for Dr. Deaver at the German Hospital the hemorrhage was so great that it was necessary to stop.

Dr. Stellwagen said he thought there was one suggestion which might be made regarding Dr. Wood's instrument to make it practical for the average surgeon. Instead of having an ordinary smooth tip to let into the bone, have it screw in, and then it will be held more firmly and will overcome entirely the danger of the point being pulled out. He thought Dr. Wood's objection to the instrument in that it tired the wrist, was a proper one.

Dr. Stellwagen referred to a case in which it took about twenty-eight minutes to get the osteoplastic flap up. He afterwards helped in the autopsy on this case and it took him about one hour to remove the calvarium.

Dr. Stellwagen has seen a good many men try to use the surgical engine, and he thinks unless they are especially trained in its use it is a very dangerous instrument. He does not think the general surgeon has either the time or the inclination to become proficient with such a complicated instrument; it further runs so rapidly that it dulls the sense of touch.

Dr. Stelwagen's own instrument was devised in 1903.

DR. CHARLES F. NASSAU referred to a demonstration given upon the cadaver before the Academy some years ago by Dr. Hopkins, who used an instrument which in principle was exactly like the one presented by Dr. Wood, except that it was very much larger, and Dr. Hopkins employed a fixation apparatus of different character.

Dr. A. C. Wood, in closing, said in regard to cutting the base of the bone flap, referred to by Dr. Roberts, that he had a model of a saw to fit his instrument for that purpose. Dr. Wood does not employ this method as a rule, but simply fractures the base.

In regard to the instruments run by power, such as the Cryer instrument, Dr. Wood admits that they are very satisfactory when they work well but they have one great disadvantage which must always be borne in mind—they have great power for harm. He believes a great many operators can report a long series of cases without a serious accident, but such accidents do occur. In the circular-saw type, he has heard of the saw breaking loose from the handle and being thrown with great force. If the power instrument while in operation catches a fibre of gauze or other material it may be at once jerked from the hands of the operator who is powerless to control it.